Louisiana Department of Environmental Quality
Office of Environmental Services

STATEMENT OF BASIS
For
Activity Number: PER20010001
Permit No. 2461-V2

Poly III Polyethylene Plant
Agency Interest No. 27518
Westlake Petrochemicals LP
Sulphur, Calcasieu Parish, Louisiana

I. APPLICANT

Company

Westlake Petrochemicals LP
Post Office Box 2449
Sulphur, Louisiana 70664-2449

Facility

Poly III Polyethylene Plant
900 Highway 108, Sulphur, Calcasieu Parish, Louisiana
UTM Coordinates: 465.18 kilometers East and 3338.11 kilometers North, Zone 15

II. FACILITY AND CURRENT PERMIT STATUS

Westlake Petrochemicals utilizes the British Petroleum Innovene process technology to produce polyethylene in two gas-phase polymerization reactors. Ethylene and comonomers are polymerized in catalytic fluidized bed reactors. Reaction mass is withdrawn to the discharge vessel and then the primary degasser. Polymer is separated from the process gas, conveyed to the secondary degasser, and transferred to the purge column where nitrogen, steam and air are used to strip VOC and deactivate the residual catalyst. This purge gas stream is vented to the flare. Polymer is stored in extruder feed silos in the extrusion area.

From the extruder feed silos, polymer is mixed with additives for stabilization, extruded, and cut into small pellets. The pellets are separated from water, dried, screened, and air conveyed to storage silos for shipping by railcar. By changing operating conditions, Westlake can produce either low or high-density polyethylene.

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The Poly III Polyethylene Plant is considered to be a part of the Lake Charles Complex, which is owned and operated by Westlake Chemical Corporation. Active and pending permits for the complex are as follows:

Permit Number	Units or Sources	Date Issued
2461-V1	Poly III Polyethylene Plant	June 29, 2001
0520-00145-V4	Petro I & II	February 4, 2005
0520-00156-V0	Styrene Marine Terminal	June 11, 2004
0520-00146-V1	Styrene Monomer Plant	January 12, 2006
PSD-LA-595(M2)	Petro II	February 4, 2005
PSD-LA-554(M3)	Petro I	March 12, 2004

III. PROPOSED PERMIT / PROJECT INFORMATION

Proposed Permit

A Part 70 operating permit application and Emission Inventory Questionnaire dated October 22, 2001, as well as additional information dated January 16, 2003, June 9, 2006, and November 15, 2006 requesting a Part 70 operating permit renewal.

A notice requesting public comment on the permit was published in *The Advocate*, Baton Rouge, and in the local newspaper. A copy of the public notice was mailed to concerned citizens listed in the Office of Environmental Services Public Notice Mailing List. The application and proposed permit were submitted to the Calcasieu Parish Library. The proposed permit was submitted to US EPA Region VI. All comments will be considered prior to the final permit decision.

Project description

Westlake Petrochemicals requests a Part 70 operating permit renewal for the Poly III. Emissions from the facility were recalculated using updated emission factors and actual operational parameters.

Permitted Air Emissions

Permitted emissions from the unit in tons per year are as follows:

Pollutant	Before	After	Change
PM_{10}	10.82	5.13	- 5.69
SO_2	0.01	0.01	-
NO_X	13.28	11.08	- 2.20
CO	37.10	31.22	- 5.88
VOC, total	86.83	78.14	- 8.69
Chlorine	0.22	0.02	- 0.20

Prevention of Significant Deterioration (PSD) Applicability

Emissions of the criteria pollutants from the project will not increase more than their PSD significance levels. Therefore, PSD analysis was not required.

Maximum Achievable Control Technology (MACT) requirements

Emissions of Class I and Class II Toxic Air Pollutants are from the combustion of vent gas at the flare. No additional control was determined as MACT.

Air Modeling Analysis

Emissions from these units are not expected to cause or to contribute to any National Ambient Air Quality Standards (NAAQS) or Ambient Air Standards (AAS) exceedances.

Dispersion Model Used: None

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to Section VIII of the draft Part 70 permit.

Insignificant Activities (LAC 33:III.501.B.5)

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to Section IX of the draft Part 70 permit. The applicability of the appropriate regulations is straightforward and provided in the Facility Specific Requirements Section of the proposed permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are provided in the Facility Specific Requirements Section of the proposed permit.

IV. PERMIT SHIELDS

The Permit does not include any Permit Shields

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V. PERIODIC MONITORING

The Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are provided in the Facility Specific Requirements Section of the proposed permit.

VI. APLICABILITY AND EXEMPTIONS OF SELECTED SUBJECT ITEMS

ID No:	Requirement	Status	Citation	Explanation
EQT002	LAC 33:III.1511 CEM for SO_2	Exempt	LAC 33:III.1511.A	SO_2 emissions < 100 tons/year
	LAC 33:III.1503.C. Emission Standards for Sulfur Dioxide	Exempt	LAC 33:III.1503.C	SO_2 emissions < 250 tons/year
EQT003	NSPS Subpart DDD 40 CFR 60.562(1)(a)(2)	Exempt	40 CFR 60.560(h)	Receives emergency vents only
	LAC 33:III.1511 CEM for SO_2	Exempt	LAC 33:III.1511.A	SO_2 emissions < 100 tons/year
	LAC 33:III.1503.C. Emission Standards for Sulfur Dioxide	Exempt	LAC 33:III.1503.C	SO_2 emissions < 250 tons/year
EQT004, EQT005 EQT007 , EQT008	NSPS Subpart DDD 40 CFR 60.562(1)(a)(1)	Exempt	40 CFR 60.560(g)	TOC < 0.10 wt%
EQT010, EQT011 EQT012, EQT013	NSPS Subpart DDD 40 CFR 60.562(1)(a)(1)	Exempt	40 CFR 60.560(g)	TOC < 0.10 wt%
EQT014, EQT015 EQT016, EQT017 EQT038, EQT039	NSPS Subpart DDD 40 CFR 60.562(1)(a)(1)	Exempt	40 CFR 60.560(g)	TOC < 0.10 wt%
FUG001	LAC 33:III.5109 – MACT requirements	Does not apply	LAC 33:III.5109	MACT is not required for Chlorine (Class III TAP)
The above table provides explanation for both the exemption status or non-applicability of a source cited by 2 or 3 in the matrix presented in Section X of the permit				

VII. STREAMLINED REQUIREMENTS

The Permit does not include any streamlined requirements.

VIII. GLOSSARY

Best Available Control Technologies (BACT) - An emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under this part which would be emitted from any proposed major stationary source or major modification which the administrative authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant.

CAM - Compliance Assurance Monitoring rule – A federal air regulation under 40 CFR Part 64

Carbon Black - A black colloidal substance consisting wholly or principally of amorphous carbon and used to make pigments and ink.

Carbon Monoxide (CO) – (Carbon monoxide) a colorless, odorless gas produced by incomplete combustion of any carbonaceous (gasoline, natural gas, coal, oil, etc.) material.
Cooling Tower – A cooling system used in industry to cool hot water (by partial evaporation) before reusing it as a coolant.

Continuous Emission Monitoring System (CEMS) – The total combined equipment and systems required to continuously determine air contaminants and diluent gas concentrations and/or mass emission rate of a source effluent.

Cyclone – A control device that uses centrifugal force to separate particulate matter from the carrier gas stream.

Duct Burner – A device that combusts fuel and that is placed in the exhaust duct from another source (such as a stationary gas turbine, internal combustion engine, kiln, etc.) to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a steam generating unit.

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Federally Enforceable Specific Condition - A federally enforceable specific condition written to limit the potential to Emit (PTE) of a source that is permanent, quantifiable, and practically enforceable. In order to meet these requirements, the draft permit containing the federally enforceable specific condition must be placed on public notice and include the following conditions:

- A clear statement of the operational limitation or condition which limits the source's potential to emit;
- Recordkeeping requirements related to the operational limitation or condition;
- A requirement that these records be made available for inspection by LDEQ personnel;
- A requirement to report for the previous calendar year.

Grandfathered Status- Those facilities that were under actual construction or operation as of June 19, 1969, the signature date of the original Clean Air Act. These facilities are not required to obtain a permit. Facilities that are subject to Part 70 (Title V) requirements lose grandfathered status and must apply for a permit.

Heat Recovery Steam Generator (HRSG) – A steam generator that recovers exhaust heat from a gas turbine, and provides economizing and steam generation surfaces.

Hydrogen Sulfide (H_2S) - A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the action of acids on metallic sulfides, and is an important chemical reagent.

Maximum Achievable Control Technology (MACT) - The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

NESHAP - National Emission Standards for Hazardous Air Pollutants –Air emission standards for specific types of facilities, as outlined in 40 CFR Parts 61 through 63

Nitrogen Oxides (NO_x) - Compounds whose molecules consists of nitrogen and oxygen.

Nonattainment New Source Review (NNSR) - A New Source Review permitting program for major sources in geographic areas that do not meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. Nonattainment NSR is designed to ensure that emissions associated with new or modified sources will be regulated with the goal of improving ambient air quality.

NSPS - New Source Performance Standards – Air emission standards for specific types of facilities, as outlined in 40 CFR Part 60

Organic Compound - Any compound of carbon and another element. Examples: Methane (CH_4), Ethane (C_2H_6), Carbon Disulfide (CS_2)

Part 70 Operating Permit- Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: ≥10 tons per year of any toxic air pollutant; ≥25 tons of total toxic air pollutants; and ≥100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM_{10}- Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) - The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.